

393

THE ANNALS  
AND  
MAGAZINE OF NATURAL HISTORY.

[FOURTH SERIES.]

No. 12. DECEMBER 1868.

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XLVIII.—*On the Annelid Family of the Maldaniae.*  
By Professor GRUBE\*.

QUATREFAGES gives this family its widest extent by including in it *Clymene*, Sav., and its nearest allies—not merely *Ammochares*, but also *Clymenidia*, *Arenia*, *Ancistria*, and *Clymenia* (which show a great resemblance to *Capitella*, *Notomastus*, and *Dasybranchus*) as “Clyméniens dégradés;” whilst Malmgren and Keferstein only include the first-mentioned genus, and even exclude *Ammochares*.

In this more restricted sense, therefore, the family embraces only genera of which the uncini are arranged in one (or two) transverse series, and is distinguished from all other families by several exclusive characters. There are a few Annelids which are characterized by a small and constant number of segments, such as the *Aphrodite*, a portion of the genus *Polynoë*, Sav., *Hesione*, &c.; but among all these there are none in which the segments attain so great a length. In the *Maldaniae* their number never exceeds twenty-six or twenty-seven; and their length in the more fully developed examples at least equals, or even exceeds, their breadth. As the length increases from the two ends towards the middle of the body, some segments grow so considerably that they are twice or three times as long as broad, or even still longer. It is further to be remarked that the setæ, and the uncini seated beneath them, do not occupy the same position on all the segments, but are placed, on the anterior segments, in front of the middle, and on the rest near the hinder margin. This change of position probably occurs generally before the middle of the body; and the two segments on which it takes place show a less distinct division between them than the rest. Fre-

\* Translated by W. S. Dallas, F.L.S., from the Jahres-Bericht der Schlesischen Gesellschaft für vaterl. Cultur, 1867, pp. 52–58.

quently the longer of the posterior segments are very much inflated behind by the elevation of the cushions on which the uncini are inserted, and may easily be torn away from the following ones, which commence with a thin part. All the segments, however, are not armed with bristles in the same manner: the buccal segment is quite destitute of bristles, as in the *Lumbricina*; the three following segments certainly bear setæ, but only a few uncini, or, instead of these, a pair of spinules, slightly bent at the apex; and the terminal segment and also usually from one to three (four) of the preceding ones, which are much abbreviated, are again destitute of bristles, although the latter generally have indications of the cushions in which the uncini are elsewhere inserted. In contradiction to other recent observers, Quatrefages describes uncini here also. In accordance with this, Quatrefages distinguishes three regions of the body in the Maldanica, of which the middle one (*regio intermedia*) embraces the large and always preponderant number of segments furnished with setæ and complete rows of uncini. The uncini, always of an elongated sigmoid form, are distinguished from all similar ones by the circumstance that beneath the apex of their usually multidentate beak a band-like chitinous lamina is placed. The cephalic and caudal extremities are so arranged that, although they do not prevent ingress to the tube constructed by the animal, which is open at both ends, because this is much longer, they very conveniently protect it in its tube against an intruder. They are constructed on much the same plan as in the *Pectinariæ*, the dorsal surface of the buccal segment usually forming a firmer plate inclined forwards, and the terminal segment a similar plate inclined backwards, or a funnel, which correspond with the tube in diameter; in the *Pectinariæ*, however, the terminal plate belongs to several of the last segments, which together constitute a valve which can be turned downwards. The cephalic lobe itself is but little developed in the Maldanica, and is probably to be sought only in the narrow longitudinal strip, projecting in front as a free lobule, which divides the vertical lamina of the buccal segment into two parts for a greater or less distance, and is marked off by a furrow on each side. In order to establish a genus of Maldanica, therefore, both the ends of the body, of which the structure is so characteristic, must be preserved; and this, owing to the readiness with which these animals are torn, is frequently not attainable. Thus we know only the anterior halves of *Clymene torquata*, Leidy, *Leiocephalus parvus*, Quatref., and *Clymene ebiensis*, M.-Edw., and of the genera *Rhodine*, Malmgr., and *Mandrocles*, *Iphianissa*, *Neco*, and *Militta*, Kinb.; *Clymene*

*spathulata*, Gr., is probably described from two extremities not belonging to the same species, and therefore to be removed provisionally from the system; and *C. microcephala*, Schm., seems, from the figure, to be engaged in the reproduction of the anterior extremity; for the first segment in the figure bears bristles, and is therefore not the buccal segment, and the process in front of it by no means resembles the cephalic lobe of other Maldaniaea.

For the purpose of a general revision of the arrangement of the genera, the structure of the cephalic and caudal extremities seems to the author to be particularly fitted; and he thinks that this arrangement may be most conveniently given in the following manner:—

1. The terminal segment is funnel-shaped, with the anus in the middle of the bottom of the funnel.

a. In nearly all the forms belonging here the margin of the funnel runs out into points or teeth, as in the genus

*Clymene*, Sav., which Malmgren divides into the genera *Rhodine*, *Nicomache*, *Axiothea*, and *Praxilla*, according as the vertical plate is dilated or not into a free margin, and according to the number of the segments, whether bearing or wanting bristles. Grube would unite under *Clymene* all the forms which have a margined vertical plate, and would therefore refer to it the *Axiothea* and *Praxilla*, and transfer *Nicomache* to *Leiocephalus*. Of *Rhodine* the terminal segment is still unknown. The genus *Clymene* does not occur at all amongst the northern ones exclusively described by Malmgren; Kinberg limits it to *C. amphistoma*, Sav., and gives as its character, according to Savigny, twenty-five (probably twenty-eight) segments, and states that the three anteanal segments bear uncini, but the three segments following the buccal segment only setæ. But Savigny only indicates twenty-eight segments as not observed with certainty; and the specimens which the author found marked with this name in Ehrenberg's collection from the Red Sea are only in fragments (long cephalic and caudal ends), and therefore leave us in the dark upon this point, although they agree with Savigny's description so far that they may be regarded as identical; they show no uncini, however, upon the anteanal segments; whilst on the three anterior segments referred to, a small spine exists beneath the setæ which may easily have escaped Savigny; his figure at least shows the pit from which it issues.

If we laid as great a weight as Malmgren upon the number of the segments, a new question would arise, namely, whether it is requisite to consider only the total number of segments,

or also the number of the setigerous segments, in the establishment of new genera. To the author it appears to be advisable for the present to regard Malmgren's genera as mere subsections.

The genus *Clymene* would then include the following species:—

- With 16 setigerous segments: *Cl. zostericola*, Quatref.  
 „ 17 setigerous segments: *Axiiothea catenata*, Malmgr. (which possesses 4 anteanal segments), *C. modesta*, Quatref., and *Cl. lyrocephala*, Schm.  
 „ 18 setigerous segments, according to Quatrefages: *Cl. uranthus*, Sav. (Savigny ascribes to it 19 segments and 4 anteanal segments.)  
 „ 19 setigerous segments; with 5 anteanal segments: (*Praxilla*), *P. prætermissa*, Malmgr., *P. arctica*, Malmgr., *P. Kefersteinii*, Kinb., *Cl. gracilis*, Sars, and *Cl. Muelleri*, Sars;  
 with 3 anteanal segments: *Cl. lumbricoides*, M.-Edw. (Quatrefages indicates only 15–16), and *Cl. diadema*, Gr., n. sp.;  
 with 2 anteanal segments: *Cl. digitata*, Gr., and *Cl. Ærstedii*, Clap.  
 „ 22 setigerous segments and 2 anteanal segments: *Cl. palermitana*, Gr.  
 „ 23 setigerous segments (?) and 3 anteanal segments: *Cl. amphistoma*, Sav.

*Clymene diadema*, Gr., discovered by Ritter von Frauenfeld in the Red Sea, like *Cl. lumbricoides*, which occurs not uncommonly at St. Vaast, presents longer and shorter teeth on the funnel; but these alternate almost regularly, one of the longer ones standing between every two or three very short ones; the median strip passes through the vertical plate not, as in *Cl. lumbricoides*, as far as the middle, but nearly to the hinder margin, and does not project as a lobe at the frontal margin.

*Clymene digitata*, Gr., and *Cl. Ærstedii*, Clap., are very similar; but the former, if the specimen examined was adult, is only one-third of the length of the other, its segments are much shorter and thicker to beyond the middle of the body, and the circular vertical plate has a distinct and entire margin; whilst in *Cl. Ærstedii* this is rather rounded pentagonal, and not distinctly marked, and has an emargination on each side behind.

From *Clymene* Quatrefages separates the genus *Leiocephalus*, which, otherwise agreeing with it, is almost or entirely destitute of a vertical plate. If we omit this last character, retain

*L. coronatus*, Quatref. and *Cl. intermedia*, Erst., and add *Sabella lumbricalis*, Fab., it would seem desirable to accept this genus, which might be united with *Nicomache*, Malmgr., if we do not adhere to the number of twenty-two setigerous segments assumed by Malmgren in the generic character. *Cl. intermedia* must have fewer; *L. coronatus* has only thirteen. Of *Cl. ebiensis*, which is perhaps identical with *Cl. intermedia*, and of *Leiocephalus parvus*, Quatref., the posterior extremity is unknown: they cannot, therefore, any more than the above-mentioned *Cl. spathulata*, be numbered among the *Leiocephali*.

Near *Clymene* we should also have to place the genus *Johnstonia*, Quatref., some of the setigerous segments of which are furnished with richly sanguiferous cæca on the surface. In the only known species, *J. clymenoides*, Quatref., the last six setigerous segments are thus distinguished.

- b. In two species of *Clymene* only do we find the terminal funnel smooth-edged and destitute of teeth, namely, in *Cl. urceolata*, Leidy, and *Cl. leiopygos*, Gr.

These might form a particular group (*Leiochone*); but they require that their examination should be repeated; it is a question especially whether the examined specimen of the latter has not a mutilated posterior extremity, as, contrary to its condition elsewhere, uncini and setæ exist even on the penultimate segment—and also whether the described anterior extremity, which is torn away behind, really belongs to this posterior extremity. In this case *Cl. urceolata* would be distinguished by the well-developed projecting margin of the vertical plate, which does not exist in *Cl. leiopygos*.

2. The terminal segment does not form a funnel, and the anus is situated on the dorsal surface.

In this section the genera *Chrysothemis* and *Sabaco*, Kinb., *Maldane*, Gr., and *Petaloproctus*, Quatref., should stand. In the first two the terminal segment, according to Kinberg, is not merely biannulate, but also divided into two parts in a longitudinal direction by two lateral furrows, and is cut off short beneath and produced above; the setæ are in part narrowly, and in part broadly margined, and in part furnished with denticulated margins; the uncini are stronger on segments 2-4, but already form small combs, which are broader further on; they persist on the penultimate segment. I cannot detect essentially distinguishing generic characters between these two genera in the description. Each of them is represented only by a single species, and that an exotic one—*C. amæna*, Kinb., and *S. maculatus*, Kinb. In *Maldane* and *Petaloproctus* the

above-mentioned lateral furrows at the posterior extremity are wanting, and a distinct posterior surface is developed upon it.

As regards *Maldane*, in which the terminal segment shows so close a resemblance to the buccal segment of *Clymene*, Malmgren has refuted the author's erroneous conception, according to which the former was the buccal segment, and the uncini stood above the setæ, and has established the correct generic character. The terminal segment has its apical surface inclined downwards and forwards, or nearly vertical and circular; the anus is situated above this; and the preceding naked segment, which, like the setigerous segments, is biannulate, shows no indications of lateral or ventral cushions. The vertical plate possesses a distinct margin, as in *Clymene*; and the setæ are partly bordered, partly finely denticulated.

Of the three species belonging to the genus, *M. biceps* (*Clymene biceps*, Sars) and *Cl. Sarsii*, Malmgr., are Scandinavian and Arctic, and *M. glebifex*, Gr., from the Mediterranean.

The genus *Petaloproctus*, Quatref., established upon a single species, is distinguished from *Maldane* partly by the want of a vertical plate, and by its much abbreviated, hemispherically inflated buccal segment, upon the anterior half of which, however, the median stripe representing the cephalic lobe is very distinctly marked in the form of a keel, and partly by a posteriorly inclined dorsal plate of the terminal segment including the anus itself.

This species is *P. terricola*, Quatref., from St. Sebastian, described as with 24 segments, of which 4 belong to the anterior, 14 to the median, and 6 to the posterior region of the body; the last two, however, are not readily distinguishable, as, according to Quatrefages, their segments bear setæ and uncini. The author believes he has met with the same animal at St. Vaast, but counts in it only 22 setigerous segments: the buccal and terminal segments are, as in all cases, destitute of bristles; and the latter does not appear to be preceded by any non-setigerous segments. If there be no error in Quatrefage's statement of the number of setigerous segments, his animal would possess in all 26 segments, as the buccal and terminal segments in the *Maldaniae* are never furnished with setæ. Moreover it is to be remarked that, in the *Petaloproctus* from St. Vaast, the cushions for the uncini of the seventeenth and five following segments extend even upon the back, where they close like a ring, and that this dorsal part of the segment is produced backward into a broad, thick point. The caudal extremity of *Clymene spathulata* so exactly corresponds with this description, that it probably

belonged to the same *Petaloproctus*. Perhaps *Rhodine Loveni*, Malmgr., also belongs here.

Malmgren follows the *Maldania* with the *Ammocharidea* as a distinct family, founded upon the genus *Ammochares*. He also describes a second genus, *Myriochele*, which seems almost to coincide with *Psammocollus*, Gr., but gives no character of the family, at least in his most recent work ('*Annulata polychæta Spitzbergiæ*' &c.). Kinberg, who establishes the same family, finds its character in the tentaculiform branchiæ seated on the buccal segment, in a change of bristles, and in the presence of superior setæ, and very numerous and minute uncini placed below them. The author would indicate (at the same time bringing together *Ammochares* and *Psammocollus*) that the body consists of only a few segments, increasing considerably in length towards the middle, that these are all furnished with setæ, and, with the exception of the foremost and hindmost, also with uncini (which, however, are placed in more than double and irregular rows, and not upon cushions), and that the buccal and terminal segments bear no plates, although the buccal segment may be produced in front into a lobe (cephalic lobe?) slit up into branches at the anterior margin. Their similarity to the *Maldania*, already treated of, strikes one at once; but with this conception of the character, Kinberg's genus *Sandanis*, as to the position of which he seems to be still doubtful, cannot be added to them; it should not be separated from *Capitella*.

To *Ammochares* belong 4 species:—*A. ottonis*, Gr., *A. assimilis*, Sars, *A. tegula*, Kinb., and *A. Sundevalli*, Kinb., the last known only by its anterior part.

Of *Psammocollus* we know only one species, *P. australis*, Gr., from the island of St. Paul; and of *Myriochele* likewise only one, *Myriochele Heeri*, Malmgr., which has been observed, but not abundantly, at Spitzbergen and Greenland.

XLIX.—*Description of Fairbankia bombayana, a new Genus and Species of Rissoidæ from Western India.* By WILLIAM T. BLANFORD, A.R.S.M., F.G.S., C.M.Z.S.

THE shell described below is one of the numerous peculiar estuarine forms so common on the shores of tropical seas. I have found but few specimens myself, and am indebted for a much larger number to the Rev. S. Fairbank and Dr. Leith. The latter very kindly procured me some living specimens about five years since. I had for a long time supposed the species to be a *Rissoa*; but two years ago I had occasion to